



TEST DATA OF ZUS34812

(48.0V INPUT)

Regulated DC Power Supply

Date : Nov. 5. 1996

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Design Manager

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Design Engineer

コーセル株式会社
COSEL CO., LTD.

CONTENTS

1. Line Regulation	1
静的入力変動	
2. Efficiency	2
効率	
3. Load Regulation	3
静的負荷変動	
4. Ripple Voltage (by Load Current)	4
リップル電圧(負荷電流特性)	
5. Ripple-Noise	5
リップルノイズ	
6. Overcurrent Protection	6
過電流保護	
7. Dynamic Load Responce	7
動的負荷変動	
8. Rise and Fall Time	8
立上り、立下がり時間	
9. Ambient Temperature Drift	9
周囲温度変動	
10. Minimum Input Voltage for Regulated Output Voltage . . .	10
最低レギュレーション電圧	
11. Ripple Voltage (by Ambient Temperature)	11
リップル電圧(周囲温度特性)	
12. Time Lapse Drift	12
経時ドリフト	
13. Output Voltage Accuracy	13
定電圧精度	
14. Condensation	14
結露特性	
15. Figure of Testing Circuitry	15
測定回路図	

(Final Page 15)

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Model		ZUS34812	Temperature		25℃																																							
Item		Line Regulation 静的入力変動	Testing Circuitry		Figure A																																							
Object		+12V0.25A																																										
1. Graph			2. Values																																									
<div><div>-----□----- Load 50%</div><div>-----△----- Load 100%</div></div> <div><div>[V]</div><div>Output Voltage</div><div>12.09</div><div>12.05</div><div>12.01</div><div>11.97</div><div>11.93</div><div>11.89</div><div>11.85</div><div>0</div></div> <div><div>Input Voltage</div><div>0</div><div>40</div><div>50</div><div>60</div><div>70</div><div>80</div><div>[V]</div></div> <div>Note: Slanted line shows the range of the rated input voltage.</div> <div>(注)斜線は定格入力電圧範囲を示す。</div>			<table><tr><th rowspan="2">Input Voltage [V]</th><th>Load 50%</th><th>Load 100%</th></tr><tr><th>Output Volt. [V]</th><th>Output Volt. [V]</th></tr><tr><td>33.0</td><td>11.955</td><td>11.953</td></tr><tr><td>36.0</td><td>11.955</td><td>11.953</td></tr><tr><td>42.0</td><td>11.955</td><td>11.954</td></tr><tr><td>48.0</td><td>11.955</td><td>11.954</td></tr><tr><td>54.0</td><td>11.955</td><td>11.954</td></tr><tr><td>60.0</td><td>11.955</td><td>11.954</td></tr><tr><td>66.0</td><td>11.955</td><td>11.953</td></tr><tr><td>72.0</td><td>11.955</td><td>11.954</td></tr><tr><td>75.0</td><td>11.955</td><td>11.953</td></tr><tr><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td></tr></table>	Input Voltage [V]	Load 50%	Load 100%	Output Volt. [V]	Output Volt. [V]	33.0	11.955	11.953	36.0	11.955	11.953	42.0	11.955	11.954	48.0	11.955	11.954	54.0	11.955	11.954	60.0	11.955	11.954	66.0	11.955	11.953	72.0	11.955	11.954	75.0	11.955	11.953	—	—	—	—	—	—	—	—	—
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Model	ZUS34812	Temperature	25℃
Item	Efficiency 効率	Testing Circuitry	Figure A
Object			

1. Graph

-----□----- Load 50%

-----△----- Load 100%

Efficiency [%]

84

80

76

72

68

64

60

56

0

0

30

50

70

Input Voltage [V]

2. Values

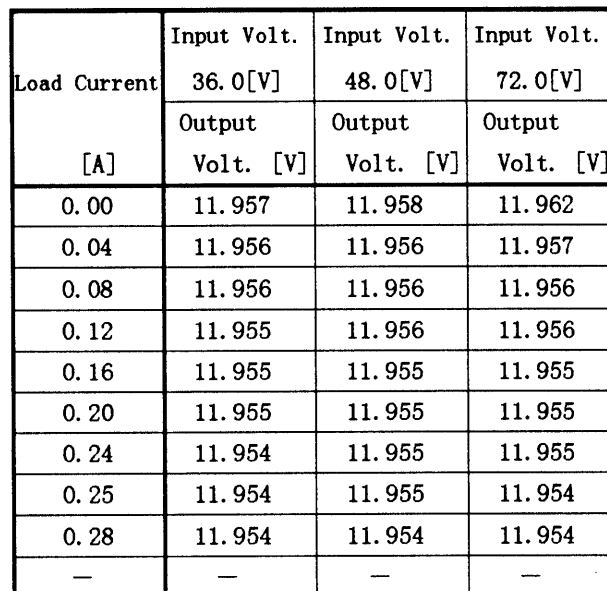
Input Voltage [V]	Load 50% Efficiency [%]	Load 100% Efficiency [%]
33.0	74.4	78.5
36.0	72.9	78.6
42.0	70.0	77.6
48.0	67.2	76.3
54.0	64.9	74.7
60.0	62.7	73.0
66.0	60.6	71.4
72.0	58.7	69.8
75.0	57.7	68.9
—	—	—
—	—	—
—	—	—

Note: Slanted line shows the range of the rated input voltage.

(注)斜線は定格入力電圧範囲を示す。

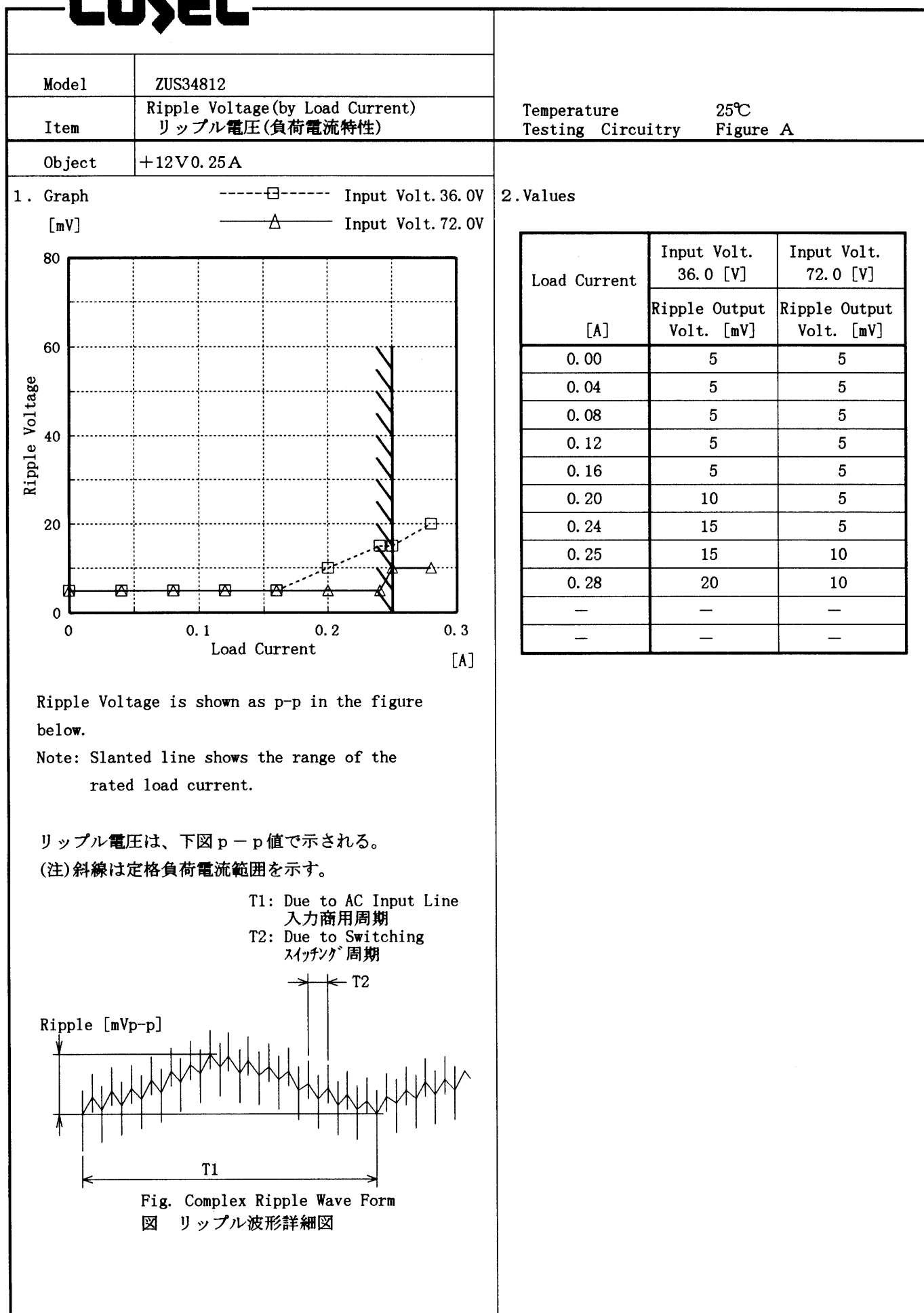
Temperature	25°C
Testing Circuitry	Figure A

2. Values

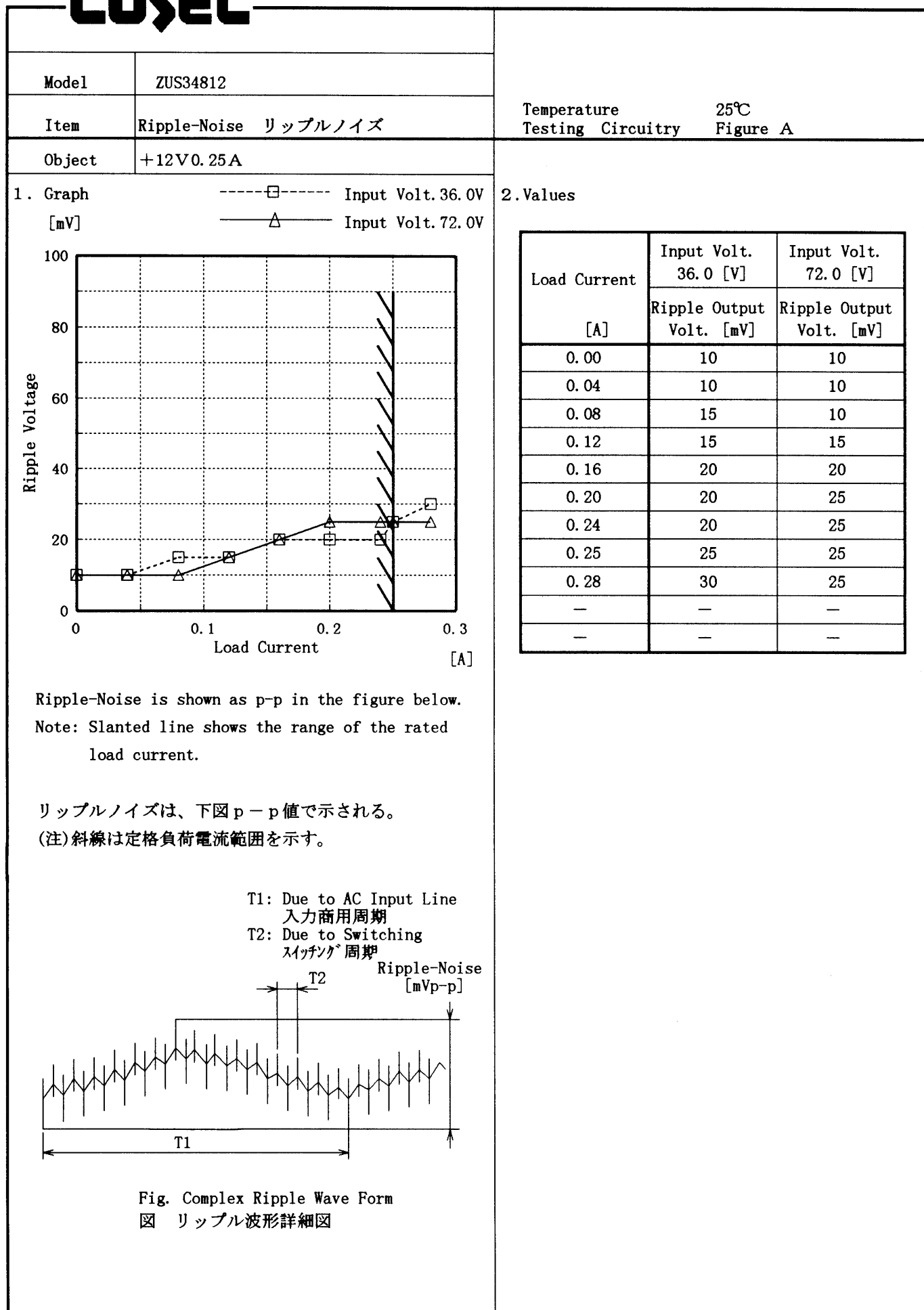


(注)斜線は定格負荷電流範囲を示す。

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<div>ModelZUS34812</div> <div>ItemOvercurrent Protection 過電流保護</div> <div>Object+12V0.25A</div>		<div>Temperature25℃</div> <div>Testing CircuitryFigure A</div>																																																				
<div>1. Graph</div> <div><div>[V]</div><div><div><div>~~~~~</div><div>————</div><div>————</div></div><div><div>Input Volt. 36.0V</div><div>Input Volt. 48.0V</div><div>Input Volt. 72.0V</div></div></div><div><div><div>Output Voltage</div><div>[V]</div></div><div><div>Load Current</div><div>[A]</div></div></div><div><div>Note: Slanted line shows the range of the rated load current.</div><div>(注)斜線は定格負荷電流範囲を示す。</div></div></div>		<div>2. Values</div> <table><tr><th>Output Voltage [V]</th><th>Input Volt. 36.0[V] Load Curr-ent [A]</th><th>Input Volt. 48.0[V] Load Curr-ent [A]</th><th>Input Volt. 72.0[V] Load Curr-ent [A]</th></tr><tr><td>12.00</td><td>0.37</td><td>0.41</td><td>0.37</td></tr><tr><td>11.40</td><td>0.37</td><td>0.41</td><td>0.37</td></tr><tr><td>10.80</td><td>0.37</td><td>0.41</td><td>0.37</td></tr><tr><td>9.60</td><td>0.38</td><td>0.41</td><td>0.36</td></tr><tr><td>8.40</td><td>0.38</td><td>0.41</td><td>0.35</td></tr><tr><td>7.20</td><td>0.38</td><td>0.40</td><td>0.34</td></tr><tr><td>6.00</td><td>0.37</td><td>0.38</td><td>0.32</td></tr><tr><td>4.80</td><td>0.36</td><td>0.36</td><td>0.31</td></tr><tr><td>3.60</td><td>0.34</td><td>0.32</td><td>0.29</td></tr><tr><td>2.40</td><td>0.31</td><td>0.29</td><td>0.27</td></tr><tr><td>1.20</td><td>0.28</td><td>0.26</td><td>0.26</td></tr><tr><td>0.00</td><td>0.21</td><td>0.25</td><td>0.27</td></tr></table>	Output Voltage [V]	Input Volt. 36.0[V] Load Curr-ent [A]	Input Volt. 48.0[V] Load Curr-ent [A]	Input Volt. 72.0[V] Load Curr-ent [A]	12.00	0.37	0.41	0.37	11.40	0.37	0.41	0.37	10.80	0.37	0.41	0.37	9.60	0.38	0.41	0.36	8.40	0.38	0.41	0.35	7.20	0.38	0.40	0.34	6.00	0.37	0.38	0.32	4.80	0.36	0.36	0.31	3.60	0.34	0.32	0.29	2.40	0.31	0.29	0.27	1.20	0.28	0.26	0.26	0.00	0.21	0.25	0.27
Output Voltage [V]	Input Volt. 36.0[V] Load Curr-ent [A]	Input Volt. 48.0[V] Load Curr-ent [A]	Input Volt. 72.0[V] Load Curr-ent [A]																																																			
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Model	ZUS34812	Temperature	25°C
Item	Dynamic Load Response 動的負荷変動	Testing Circuitry	Figure A
Object	+12V0.25A		

Input Volt. 48.0 V

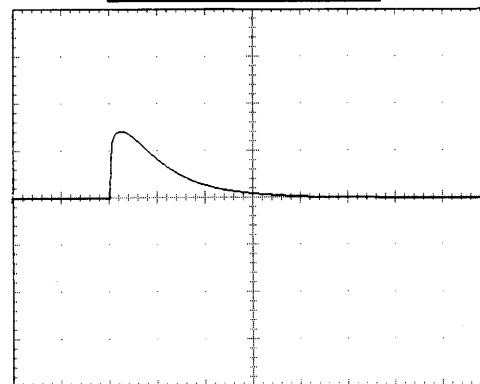
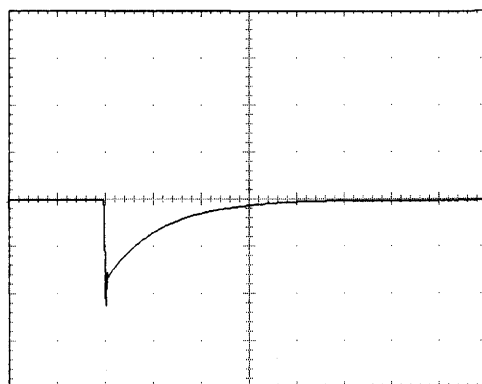
Cycle 100 mS

Load Current

Min. Load ↔

Load 100 %

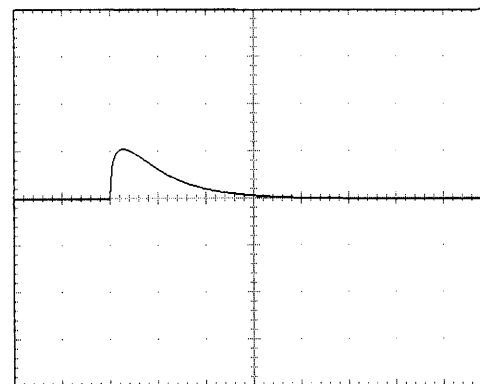
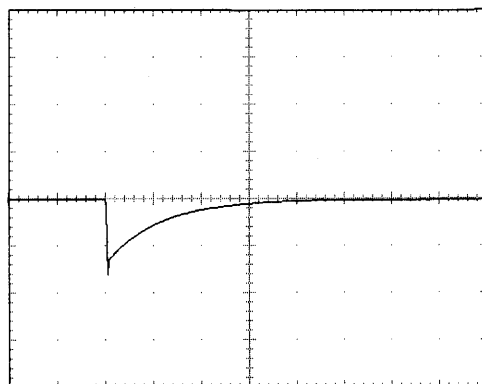
200 mV/div



Min. Load ↔

Load 50 %

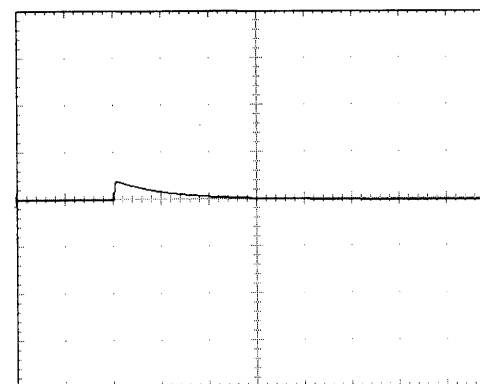
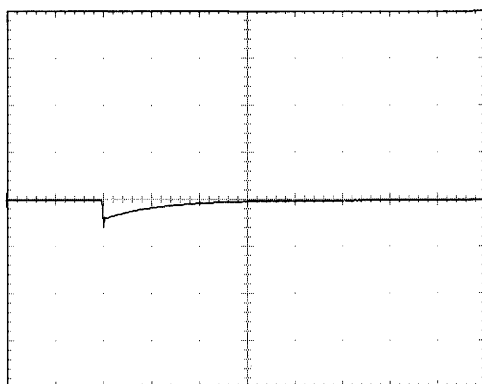
200 mV/div



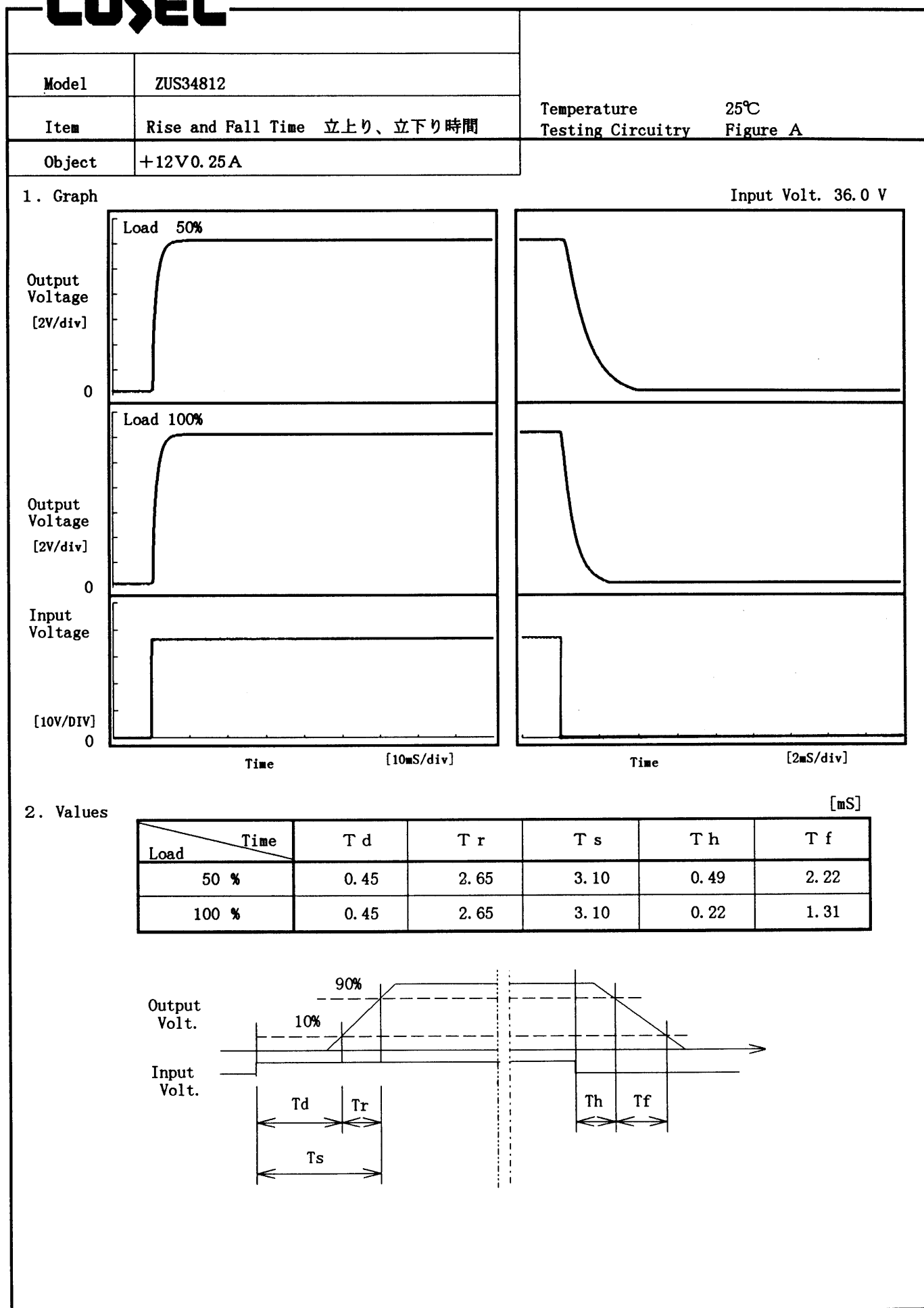
Load 50% ↔

Load 100 %

200 mV/div



1 mS/div

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Model		ZUS34812	Testing Circuitry Figure A
Item		Ambient Temperature Drift 周囲温度変動	
Object		+12V0.25A	

1. Graph

△

—

Input Volt. 36.0V

□

Input Volt. 48.0V

○

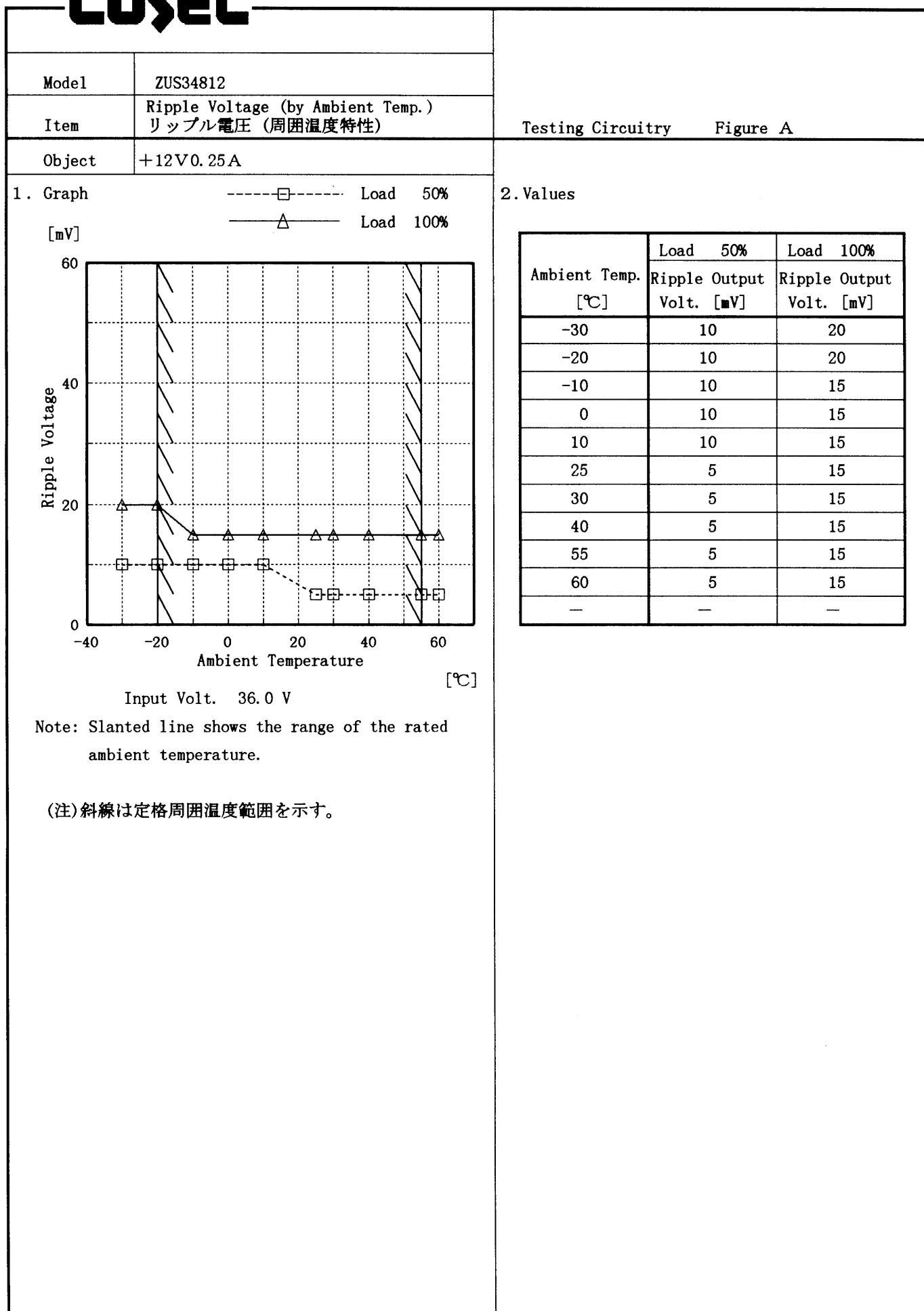
Input Volt. 72.0V

Output Voltage [V]

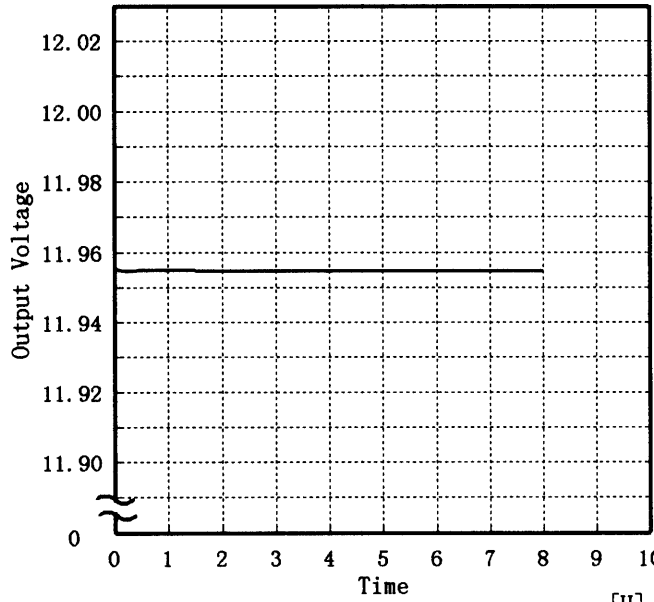
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Model		ZUS34812																																				
Item		Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧																																				
Object		+12V0.25A																																				
1. Graph		<div> <div> <div>-----□-----</div> <div>Load 50%</div> </div> <div> <div>———△———</div> <div>Load 100%</div> </div> </div> <p>Input Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Note: Slanted line shows the range of the rated ambient temperature.</p> <p>(注)斜線は定格周囲温度範囲を示す。</p>																																				
2. Values		<table border="1"> <thead> <tr> <th>Ambient Temp. [°C]</th><th>Load 50% Input Volt. [V]</th><th>Load 100% Input Volt. [V]</th></tr> </thead> <tbody> <tr><td>-30</td><td>22.4</td><td>26.9</td></tr> <tr><td>-20</td><td>21.4</td><td>26.4</td></tr> <tr><td>-10</td><td>20.9</td><td>25.4</td></tr> <tr><td>0</td><td>20.4</td><td>24.9</td></tr> <tr><td>10</td><td>19.9</td><td>24.4</td></tr> <tr><td>25</td><td>18.9</td><td>23.4</td></tr> <tr><td>30</td><td>18.9</td><td>23.4</td></tr> <tr><td>40</td><td>18.4</td><td>23.4</td></tr> <tr><td>55</td><td>17.9</td><td>23.4</td></tr> <tr><td>60</td><td>17.9</td><td>23.9</td></tr> <tr><td>—</td><td>—</td><td>—</td></tr> </tbody> </table>	Ambient Temp. [°C]	Load 50% Input Volt. [V]	Load 100% Input Volt. [V]	-30	22.4	26.9	-20	21.4	26.4	-10	20.9	25.4	0	20.4	24.9	10	19.9	24.4	25	18.9	23.4	30	18.9	23.4	40	18.4	23.4	55	17.9	23.4	60	17.9	23.9	—	—	—
Ambient Temp. [°C]	Load 50% Input Volt. [V]	Load 100% Input Volt. [V]																																				
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Model	ZUS34812	Temperature 25 ℃ Testing Circuitry Figure A																							
Item	Time Lapse Drift 経時ドリフト																								
Object	+12V0.25A																								
1. Graph		2.Values																							
<div>[V]</div> <div></div> <div>Output Voltage [V]</div> <div>Time [H]</div> <div>Input Volt. 48V</div> <div>Load 100%</div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>11.955</td></tr><tr><td>0.5</td><td>11.955</td></tr><tr><td>1.0</td><td>11.955</td></tr><tr><td>2.0</td><td>11.955</td></tr><tr><td>3.0</td><td>11.955</td></tr><tr><td>4.0</td><td>11.955</td></tr><tr><td>5.0</td><td>11.955</td></tr><tr><td>6.0</td><td>11.955</td></tr><tr><td>7.0</td><td>11.955</td></tr><tr><td>8.0</td><td>11.955</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	11.955	0.5	11.955	1.0	11.955	2.0	11.955	3.0	11.955	4.0	11.955	5.0	11.955	6.0	11.955	7.0	11.955	8.0	11.955
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5.0	11.955																								
6.0	11.955																								
7.0	11.955																								
8.0	11.955																								

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Model	ZUS34812	Testing Circuitry Figure A
Item	Output Voltage Accuracy 定電圧精度	
Object	+12V0.25A	

Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -20~55 °C

Input Voltage : 36.0~72.0 V

Load Current : 0.00~0.25 A

* Output Voltage Accuracy = $\pm (\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

* Output Voltage Accuracy (Ratio) = $\frac{\text{Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

定電圧精度

周囲温度、入力電圧、負荷を下記仕様内で、任意に変動させたときの出力電圧の変動をいう。

周囲温度 : -20~55 °C

入力電圧 : 36.0~72.0 V

負荷電流 : 0.00~0.25 A

* 定電圧精度(変動値) = $\pm (\text{出力電圧の最高値} - \text{出力電圧の最低値}) / 2$

* 定電圧精度(変動率) = $\frac{\text{変動値}}{\text{定格出力電圧}} \times 100$

Item	Temperature [°C]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy (Ratio) [%]
Maximum Voltage	25	72.0	0.00	11.960	±9	±0.1
Minimum Voltage	-20	36.0	0.25	11.943		

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Model	ZUS34812
Item	Condensation 結露特性
Object	+12V0.25A

Testing Circuitry Figure A

1. Condensation test

Testing procedure is as follows.

- ① Keeping and cooling the unit in a tank at -10℃ for an hour with the input off.
- ② Taking it out of the tank and dewing itself in a room where the temperature is 25℃ and the humidity is 40%RH.
- ③ Testing electrical characteristics of the unit to confirm there be no fault.
- ④ Repeating ①,② and ③ three times.

1. 結露特性試験

入力を切った状態で、恒温槽で－10℃に冷却しておき、約1時間後に恒温槽から取り出し、室温25℃、湿度40%RHの状態におき結露させ、その電気的特性の測定を3度行い、異常のないことを確認する。

2. Values

	Times	Output Voltage [V]	Ripple Voltage [mV]	Ripple Noise [mV]
Load 50 %	1	11.948	5	15
	2	11.947	5	15
	3	11.948	5	15
Load 100 %	1	11.947	10	20
	2	11.946	10	20
	3	11.947	10	20

Input Volt. 48.0 V

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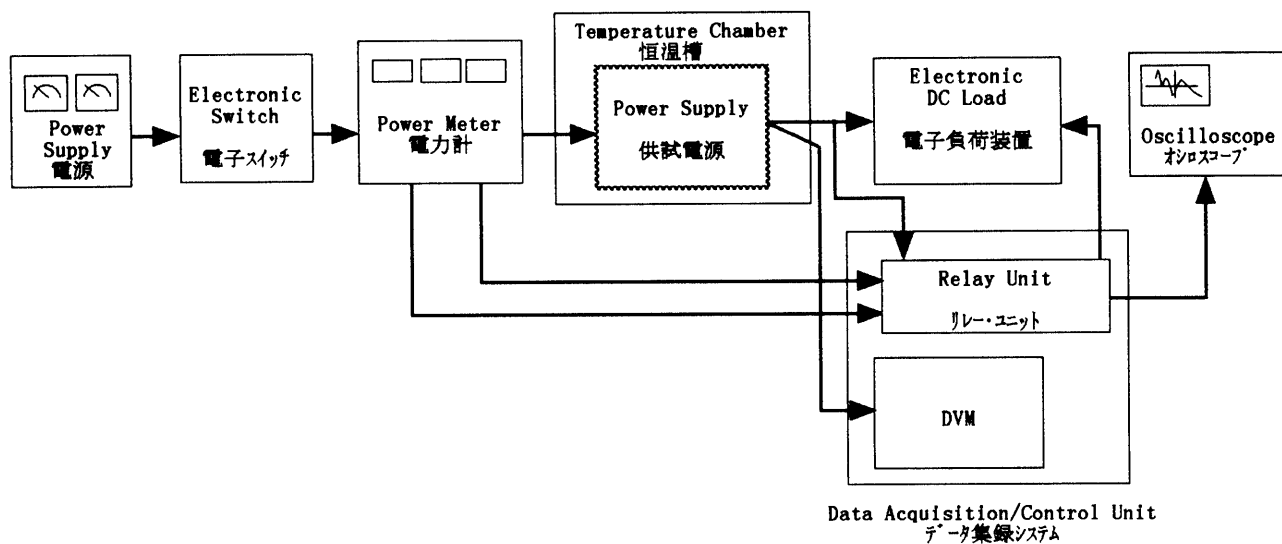


Figure A